

REMARKS

Claims 51-67 are pending. Claim 66 is amended. Support for the amendment can be found, for example, at page 11 of the specification and Figs. 1-5. No new matter has been added.

Rejection under 35 U.S.C. § 112, second paragraph

Claim 66 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite; specifically, for lack of antecedent basis for the phrase "the capillary gap." Office Action at 2-3. Claim 66 depends from claim 51. Claim 66 has been amended so as to refer to "the reaction chamber" instead of "the capillary gap." Claim 51 provides antecedent basis for the phrase "the reaction chamber." Applicants respectfully ask that the rejection be reconsidered and withdrawn in view of the amendment.

Rejection under 35 U.S.C. § 103(a)

Claims 51-55, 58-67, and 66-67 have been rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,882,903 to Andrevski et al. ("Andrevski") in view of U.S. Patent No. 5,922,604 to Stapleton et al. ("Stapleton"). Office Action at 3. Claim 51 is independent.

Claim 51 relates to a device for duplicating and characterizing nucleic acids in a reaction chamber defined by a chamber support having an optically permeable first surface facing the reaction chamber, a chamber body sealingly placed on the chamber support, and an optically permeable chip. The chamber support includes a recess having an edge configured to support a chip, and an inlet providing fluid communication between the reaction chamber and an environment external to the reaction chamber. The chip is sealingly supported by the edge of the recess. The chip has a second surface facing the reaction chamber, the second surface having an array of multiple different polynucleotide probes immobilized thereon. The first and second surfaces are substantially parallel.

The Examiner argues that Andrevski teaches ". . . a chamber body sealed onto the chamber support (210 and 216) having a recess having an edge (211) . . . and an optically permeable chip (251, Column 11, line 63-Column 12, line 12) sealed to the supporting edge of

the recess (Column 5, lines 3-21)." Office Action at 3. Stapleton is cited for evidence that "PCR amplification chambers having arrayed probes were well known in the art at the time the invention was made." Office Action at 4. Applicants respectfully disagree with the Examiner's interpretation of Andrevski.

At column 5, lines 3-21, Andrevski describes a first assembly that includes:

- (a) structural ring 210;
- (b) an upper cover 251 which includes
 - (i) membrane 241, and
 - (ii) locking ring 214; and
- (c) a lower cover 252 which includes
 - (i) membrane 242, and
 - (ii) locking ring 215.

The device taught by Andrevski requires at least five distinct elements to assemble a reaction chamber: one structural ring, two membranes, and two locking rings. The membranes are each held between their respective locking rings and the structural ring by a compression fit.

Claim 51 recites "a chamber body sealingly placed on the chamber support." At page 14, the specification describes "... chamber body 1 in a rigid, unreleasable connection with chamber support 5 through its bearing surface 4. This connection, for example, can be realized by adhesion . . . a melt connection or by manufacturing same integrally."

Rather than a chamber body sealingly placed on the chamber support, Andrevski teaches a compression fit to hold a membrane between the structural ring and the locking ring. The membrane is not rigid (see Andrevski at FIGS. 4B-4C, column 4, lines 30-55, and at column 9, lines 43-63). In this sense, Andrevski does not teach a chip but instead deformable membranes (column 9, lines 43-45).

Because the combination of Andrevski and Stapleton fails to teach all claimed limitations, Applicants respectfully ask the Examiner to reconsider and withdraw the rejection.

Andrevski in view of Stapleton and McBride

Claims 56 and 57 have been rejected under § 103(a) as being obvious over Andrevski in view of Stapleton and in further view of U.S. Patent No. 6,296,752 to McBride et al. ("McBride"). Office Action at 8-9.

As discussed above, Andrevski and Stapleton do not teach all the limitations of independent claim 51. McBride does not remedy this defect. The combination of Andrevski, Stapleton, and McBride does not teach, suggest or motivate a person skilled in the art to make the devices of claims 56 and 57. For at least these reasons, Applicants request that the Examiner reconsider and withdraw this rejection.

Andrevski in view of Stapleton and Fodor

Claim 65 has been rejected under § 103(a) as being obvious over Andrevski in view of Stapleton in further view of U.S. Patent No. 5,744,101 to Fodor et al. ("Fodor"). See the Office Action at 9-10.

As discussed above, Andrevski and Stapleton do not teach all the limitations of independent claim 51. Fodor does not remedy this defect. The combination of Andrevski, Stapleton, and Fodor does not teach, suggest or motivate a person skilled in the art to make the device of claim 65. For at least these reasons, Applicants request that the Examiner reconsider and withdraw this rejection.

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CONCLUSION

Applicants ask that all claims be allowed. Please apply any charges or credits to deposit account 19-4293.

Respectfully submitted,

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